WHAT IS CLAIMED IS:

1. An image processor that corrects input image data having a predetermined grayscale range, comprising:

a coefficient holding device to hold correction coefficients of a correction curve that correspond to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

a correction amount determination device to determine a correction amount based on statistical information of grayscale values of pixels in the input image data; and

a correction device to correct the input image data by adding the product of the correction amount and the correction coefficients determined by the input image data to the input image data.

2. The image processor according to Claim 1,

the coefficient holding device holding only the correction coefficients corresponding to one of the specific curve pattern portions in the combination portion, and

the correction device including a device to generate correction coefficients corresponding to the combination portion based on the correction coefficients corresponding to the specific curve pattern portion.

3. The image processor according to Claim 1,

the combination portion including a portion symmetric with the specific curve pattern portion with respect to a horizontal axis or a vertical axis of the correction curve used as a reference axis.

4. The image processor according to Claim 1,

the correction points being two points that are symmetric with respect to the center of the grayscale range, and

the coefficient holding device holding correction coefficients that make absolute values of the correction amount at the two points equal and have opposite polarities.

5. The image processor according to Claim 1,

the correction points being two points that are a quarter of the lower limit of the grayscale range and a quarter of the upper limit of the grayscale range, and

the coefficient holding device holding correction coefficients that make the absolute values of the correction amount at the two points equal and have opposite polarities.

6. The image processor according to Claim 1,

the correction point being one of the two points that are symmetric with respect to the center of the grayscale range.

7. The image processor according to Claim 1,

the correction device performing luminance correction and color difference correction on the input image data using the same correction coefficients held by the coefficient holding device.

8. The image processor according to Claim 7,

the correction device simultaneously performs the luminance correction and the color difference correction by time-divisionally referring to the coefficient holding device.

9. An image processor that corrects input image data having a predetermined grayscale range, comprising:

a coefficient holding device to hold correction coefficients of a correction curve that correspond to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

a correction curve data generating device to generate and store correction curve data with respect to all grayscale values corresponding to the grayscale range with reference to the coefficient holding device by adding the product of the correction amount and the correction coefficient corresponding to each of the grayscale values to each of the grayscale values; and

a correction device to perform grayscale correction on the input image data with reference to the correction curve data.

10. The image processor according to Claim 9,

the correction points being two points that are symmetric with respect to the center of the grayscale range, and

the coefficient holding device holding correction coefficients that make absolute values of the correction amount at the two points equal and have opposite polarities.

11. The image processor according to Claim 9,

the correction points being two points that are a quarter of the lower limit of the grayscale range and a quarter of the upper limit of the grayscale range, and

the coefficient holding device holding correction coefficients that make the absolute values of the correction amount at the two points equal and have opposite polarities.

12. The image processor according to Claim 9,

the correction point being one of the two points that are symmetric with respect to the center of the grayscale range.

13. The image processor according to Claim 9,

the correction including chroma correction that corrects two color difference data of the input image data, and

the correction device performing correction on the two color difference data by time-divisionally referring to the same correction curve data.

14. An image processing method that corrects input image data having a predetermined grayscale range, comprising:

holding correction coefficients of a correction curve that correspond to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

determining a correction amount based on statistical information of grayscale values of pixels in the input image data; and

performing grayscale correction on the input image data by adding the product of the correction amount and the correction coefficients determined by the input image data to the input image data.

15. An image processing method that corrects input image data having a predetermined grayscale range, comprising:

holding correction coefficients of a correction curve that correspond to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

generating and storing correction curve data with respect to all grayscale values corresponding to the grayscale range with reference to the coefficient holding device by adding the product of the correction amount and the correction coefficient corresponding to each of the grayscale values to each of the grayscale values; and

performing grayscale correction on the input image data with reference to the correction curve data.

16. A computer-readable recording medium on which an image processing program is recorded, the image processing program correcting input image data having a predetermined grayscale range and being executable by a computer,

the program comprising:

a process to hold correction coefficients of a correction curve that correspond to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

a process to determine a correction amount based on statistical information of grayscale values of pixels in the input image data; and

a process to perform grayscale correction on the input image data by adding the product of the correction amount and the correction coefficients determined by the input image data to the input image data.

17. A computer-readable recording medium on which an image processing program is recorded, the image processing program correcting input image data having a predetermined grayscale range and being executable by a computer,

the program comprising:

a process to hold correction coefficients of a correction curve that corresponds to the entire grayscale range or a portion of the grayscale range and include one or more correction points and a combination portion that is formed of a combination of a plurality of specific curve pattern portions;

a process to generate and store correction curve data with respect to all grayscale values corresponding to the grayscale range with reference to the coefficient holding device by adding the product of the correction amount and the correction coefficient corresponding to each of the grayscale values to each of the grayscale values; and

a process to perform grayscale correction on the input image data with reference to the correction curve data.